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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,857	01/31/2001	Manabu Hiraoka	000348-251	2103

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EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/772,857	HIRAOKA ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-3, 11, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Rossin et al (6,069,291) with Humphries (4,812,170) to show inherent state of fact.

Rossin '291 discloses a process for decomposing perfluoroalkanes using a catalyst composition consisting essentially of aluminum oxide, wherein said aluminum oxide is stabilized , with an element selected from the group consisting of barium, calcium, cerium, chromium, cobalt, iron, lanthanum, phosphorus, magnesium, nickel, silicon, titanium, yttrium, and zirconium (note paragraph bridging columns 2-3).

In Example IV, a magnesium-aluminum oxide catalyst composition is disclosed (note column 7). The calcination temperature of 535°C would convert the magnesium nitrate to magnesium oxide. The resulting material was approximately 0.85% by weight of magnesium (if this is expressed in term of elemental magnesium, then the weight percent in term of magnesium oxide would be 1.41%, with MW of Mg=24.3 and MgO = 40.3).

Humphries '170 is applied to show that magnesium nitrate decomposes to magnesium oxide and oxides of nitrogen at a temperature of approximately 330°C (note column 2, lines 10-12).

For the preamble, it is considered as an intended use and is given little weight.

The composition as disclosed in Rossin '291 anticipates the claimed product.

The following is quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6-7, 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scholz et al (6,110,436).

Scholz '436 discloses a process for removing fluorinated compounds such as perfluorinated hydrocarbons from a gas stream by passing the gas stream through a solid sorbent, wherein the solid sorbent comprises gamma-alumina (note claim 1). The sorbent is heated to a temperature at most 600°C. This fairly teaches the heating means as required in the instant claim 4.

The alumina can be doped with metals of groups Ia, IIa, IVa, Ib, IIb, IVb, VIb, VIIb, and VIIIb. The sorbent can also contains oxides and other compounds of these metals (note column 3, lines 42-45). Thus, Scholz '436 fairly suggests that the alumina sorbent can further contain magnesium oxide (group IIa metal oxide).

The number of possible dopants disclosed in Scholz '436 is too large for anticipation.

It would have been obvious to one skilled in the art to select any combination among the specifically disclosed compounds, Merck & Co. Inc. v. Biocraft Laboratory Inc. 10 USPQ 1846.

Claims 4-5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scholz '436 in view of Aoki et al (5,164,163).

Scholz '436 is applied as stated above.

The difference not yet discussed is Scholz '436 does not disclose a reactor which comprises an inner drum and an outer drum.

Aoki '163 discloses a hydrocarbon apparatus comprising a furnace casing, an innermost central tube defining a combustion gas passage formed in the furnace casing, a cylindrical reaction section within the furnace casing which is made up of concentric cylindrical walls defining multilayered annular passages, with at least some of multilayers passages being filled with catalysts (note claim 1). Aoki '163 discloses when the discharged gas is at high temperature, it is necessary to install a cooler or heat exchanger to cool the gas (note column 3, lines 41-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made use the apparatus as suggested by Aoki '163 for the process of Scholz '436 because the apparatus of Aoki '163 is more compact, has better thermal efficiency (note Aoki '163, column 1, lines 42-63).

Applicant's arguments filed December 18, 2003 have been fully considered but they are not persuasive.

The rejection over Atobe reference is withdrawn in view of the filing of the priority document and the translation.

Applicants argue that for Rossin '291, the stabilizing element must be present as the free metal and there is nothing in the disclosure of this reference which indicates that metal oxides are useful stabilizers.

Applicants' argument is not persuasive because in Rossin '291, it is disclosed that additional components may be used as solid metal salts, such as nitrates, acetates, oxalates, etc., or may be added as small metal or *metal oxide* particles (note column 4, lines 45-48). Thus, Rossin '291 clearly teaches that metal oxide can be used, there is nothing in the specification to teach that the "additional element" (i.e., the stabilizing element) must be in the form of free metal as argued by Applicants.

Applicants argue that there is no evidence of record to support the Examiner's theory that the calcinations in Example IV inherently provide an amount of magnesium oxide which is within the ranges set forth in Applicants' claims 2 and 3.

Humphries '170 is now cited to show the inherent state of fact that magnesium nitrate decomposes into magnesium oxide and oxide of nitrogen at a temperature of approximately 330°C.

Applicants argue that there is no disclosure in Scholz '436 that would motivate those of ordinary skill to select an alkaline earth metal compound such as an oxide or

hydroxide thereof as a dopant from the hundreds of possible metals, oxides and other compounds encompassed by the above-quoted passage.

Since group IIA and oxide are specifically disclosed in Scholz '436, it would have been obvious to one skilled in the art to select an alkaline earth metal oxide among the disclosed suitable dopants through routine optimization, see Merck & Co. Inc. v. Biocraft Laboratory Inc. 10 USPQ 1846.

Applicants argue that that the comparative example 1 on page 10 of Applicants' specification shows that the claimed solid reactants are more effective over a longer period of time the aluminum oxide per se.

Any unexpected results should be compared the closest prior art. In this case, Scholz does disclose a sorbent which comprises alumina or aluminum hydroxide and a dopant (note column 3, lines 42-45 and Example 1).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-1700.

Ngoc-Yen Nguyen

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
March 8, 2004